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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/579,596	05/26/2000	Lloyd F. Linder	PD-99W166	8433

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EXAMINER

ODOM, CURTIS B

ART UNIT	PAPER NUMBER
2634	11

DATE MAILED: 06/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/579,596

Applicant(s)

LINDER ET AL.

Examiner

Curtis B. Odom

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-7,11-13,15 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) 19-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-7,11-13,15,17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2000 and 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Newly submitted claims 19-21 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 19-21 refer to a signal processing system which comprises of a radio frequency converter, a multiplexing circuit, a demultiplexing circuit, and a control circuit for controlling the signal processing system. The originally claimed invention also refers to a signal processing system; however, the claims of the originally claimed invention of a signal processing system do not recite the limitations of a radio frequency converter, a multiplexing circuit, or a control circuit for controlling the signal processing system separately or in combination. Therefore the combination of these limitations in the newly submitted claims creates a signal processing system or circuit that is independent or distinct from the originally claimed invention.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 19-21 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 4-7, 11-13, 15, 17 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 4-7 and 11-13 recite the claim limitations “means for distributing the input signal to one of two or more channels” and “means for combining the signals output by two or more said processing means”. Claim 15 recites the limitations “a distributor for distributing said input signal to one of two or more channels” and “a combining circuit for combining the signals”. Claim 17 recites the limitations “a distributor...for distributing the input signal” “a demultiplexer connected to the outputs of each IF filter for combining the signals output by each of the IF filters”. Claim 18 recites the limitation “a distributor for distributing said input signal”. However, after reviewing the specification (Fig. 1, block 50, Fig. 2, blocks 80 and 110, pages 5-9), it is the understanding of the examiner that the means for distributing /distributor of this application refers to a multiplexer; and the means for combining/combining circuit of this application refers to a demultiplexer as recited in claim 17. However, it would have been obvious to one skilled in the art at the time the invention was made that it is well known in the art that a demultiplexer is used to separate (distribute) signals, not combine signals; and a multiplexer is used to combine signals, not distribute signals (see Citta et al., U.S. Patent No. 5, 636, 251).

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 4-6 recite the limitation "said mixing circuit" in claim 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (previously cited in Office Action 1/21/04) in view of Tomasz et al. (previously cited in Office Action 1/21/04).

Regarding claim 1, Lee et al. discloses a signal processing system comprising:

a receiver for receiving (Fig. 4, block 405, column 3, lines 3-9) an incoming RF signal;
a pre select filter (Fig. 4, block 410, column 3, lines 23-38) connected to the incoming receiver for filtering the received incoming signal;
a low noise amplifier (Fig. 4, block 420, column 3, lines 23-38) connected to the pre select filter for amplifying the filtered incoming signal;
an image rejection filter (Fig. 4, block 425) connected to the low noise amplifier for rejecting predetermined images of the amplified incoming signal to thereby output an incoming signal;

a distributor (Fig. 4, block 460 and 465, column 3, lines 60-64) connected to the image rejection filter for distributing the input signal to one of at least two channels in a current mode of operation;

an intermediate frequency filter (Fig. 4, block 470, column 3, lines 63-66, wherein the filters are disposed in each channel as shown in Fig. 1) disposed in each of the two channels for processing the input signal and providing an output signal in response thereto, wherein the low pass filters act as intermediate frequency filters since they filter an intermediate frequency signal, and

a multiplexer (column 3, line 64-column 4, line 2, DSP) connected to the outputs of each IF filter for combining the signals output by each of the IF filters, wherein a DSP combines I and Q signals output from ADC's (see Tomasz et al., Fig. 3, block 78, column 4, lines 58-67), and since multiplexers are well known in the art for combining signals, it would have been obvious that a multiplexer could have been included in the DSP.

Lee et al. does not disclose only one of the intermediate frequency filters are active at a time.

However, Tomasz et al. discloses filters disposed in each of multiple channels for processing a distributed signal and providing an output signal thereto, wherein the operations of the filters can be controlled by an external source (Fig. 3, block 102, column 4, lines 22-36). Controlling the operations of the filters by an external source would allow the tuning as well as activation/deactivation of the filters. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the signal processing system of Lee et al. with the filters of Tomasz et al. which would allow for allow the tuning as well as

activation/deactivation of the processors. This would allow the system to save power with the activation/deactivation of the processors and create greater adaptability in the system by allowing the tuning of the filters.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Woo et al. (U. S. Patent No. 6, 125, 135) discloses distributing an input signal and performing automatic gain control on the distributed signals.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 703-305-4097. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Curtis Odom
June 15, 2004



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